

Advisory for Glycohemoglobin (A1c) Data

- **Glycohemoglobin cross-over study regression equation for 2005-2006 (GHB_D) and 2003-2004 (GHB_C) should not be used for trend analyses, and glycohemoglobin results for 2007-2008 (GHB_E) and 2009-2010 (GHB_F) have been withdrawn from release until further evaluation can be completed.**

In 2010, new clinical recommendations included applying glycohemoglobin (A1c) to the diagnosis of diabetes and prediabetes. This change resulted in an increased use of the NHANES A1c data at lower levels to identify people with prediabetes. Applying these new recommendations led to a re-evaluation of the previously released NHANES A1c data.

During NHANES 1999-2010 there have been two A1c laboratory equipment changes: from Primus CLC330 (for 1999-2004) to Tosoh A1C 2.2 Plus (for 2005-2006); and from Tosoh A1C 2.2 Plus (for 2005-2006) to Tosoh A1C G7 (for 2007-2010). A laboratory methods cross-over study was conducted at the time of each of these laboratory equipment changes.

The components of the NHANES A1c data re-evaluation include re-assessment of laboratory equipment changes, cross-over studies, laboratory harmonization data from the National Glycohemoglobin Standardization Program (NGSP), quality control data and participant A1c data trends which occurred during NHANES 1999-2010.

On 11/04/2011, A1c data for NHANES 2007-2008 (GHB_E) and 2009-2010 (GHB_F) were temporarily withdrawn from release pending completion of this re-evaluation.

In addition, it has now been determined that the A1c cross-over study regression equation to compare NHANES 2005-2006 data to 2003-2004 data results in an over-correction of the data and should not be used. A correction to the documentation for 2005-2006 (GHB_D) will be posted. If this cross-over study regression equation correction was used for A1c trend analyses, please review any previous analyses without this cross-over regression equation to assess if there are any statistically significant changes to the findings.

The re-evaluation of the 2007 A1c laboratory methods cross-over study, laboratory NGSP harmonization data for A1c, and participant A1c data trends for NHANES 1999-2010 are still ongoing and further updates and recommendations will be posted to the NHANES web-site when the re-evaluation of the A1c data is completed.